

**TRANSMITTAL
FORM**

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TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	09/920,310	
	Filing Date	August 1, 2001	
	First Named Inventor	Nicolau	
	Art Unit	1626	
	Examiner Name	Anderson, R.L.	
Total Number of Pages in This Submission	7	Attorney Docket Number	GMX-005.01

ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Response to Non-Responsive Reply (6 pages); Return postcard
<div>Remarks</div>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Michael DiVerdi
Signature	<i>Michael J. DiVerdi</i>
Date	June 17, 2004

CERTIFICATE OF TRANSMISSION/MAILING

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Typed or printed name	Steve Pereira		
Signature	<i>Steve Pereira</i>	Date	June 17, 2004

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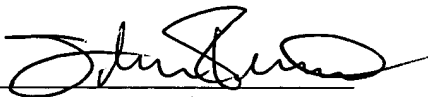


1626
Jhw

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Nicolau, Y.C. et al.	Attorney Docket No.: GMX-005.01
Serial No: 09/920,310	Examiner: Anderson, R. L.
Filed: August 1, 2001	Group Art Unit: 1626
For: <i>Ammonium Salts Of Hemoglobin Allosteric Effectors, and Uses Thereof</i>	

Commissioner for Patents
P.O. Box 1450
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Response to Non-Responsive Reply

Dear Examiner Anderson:

In a Non-Responsive Reply dated May 19, 2004, it was stated that the Applicants' selected species, made in a reply dated February 25, 2004, to a restriction requirement dated January 23, 2004, does not fall within elected Group I. The Applicants respectfully traverse this contention.

It was stated that the elected group requires an aliphatic ammonium cation and that the Applicants' election of a species having cyclohexyl ammonium cations does not satisfy this requirement because aliphatic by definition means an open chain hydrocarbon and not a cyclic one. The Applicants respectfully traverse this definition of aliphatic and respectfully submit that aliphatic includes both cyclic and open chain hydrocarbons.

To support their position, the Applicants have included pages 34 and 78 from Streitwieser and Heathcock's "Introduction to Organic Chemistry," third edition, 1985, which defines aliphatic as excluding aromatic compounds, but including both cyclic and open chain hydrocarbons.

Therefore, based on what one of ordinary skill in the art would consider aliphatic, as supported by text book definitions, the Applicants respectfully submit that their elected species comprising cyclohexyl ammonium cations falls within the elected group, and that the election made on February 25, 2004, was fully responsive.

Fees

The Applicants believe no fee is due in connection with the filing of this paper. Nevertheless, the Director is hereby authorized to charge any required fee to our Deposit Account, **06-1448**.

Conclusion

The Applicants believe that they have responded fully to the Office communication dated May 19, 2004. However, if a telephone conversation with Applicant's Agent would expedite prosecution of the above-identified application, the Examiner is urged to contact the undersigned.

Respectfully submitted,
Foley Hoag LLP

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Date: June 17, 2004

INTRODUCTION *to* ORGANIC CHEMISTRY

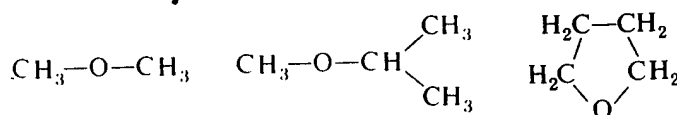
Andrew Streitwieser, Jr.
Clayton H. Heathcock

THIRD EDITION

Chap. 3

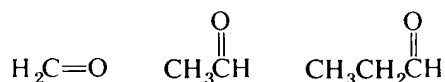
Organic
Structures

Some Ethers

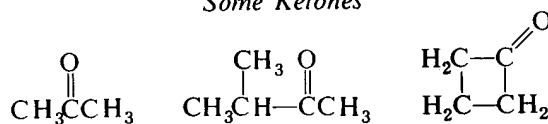


The carbon-oxygen double bond, the carbonyl group, is found in **aldehydes** and **ketones**. When the carbonyl group is bonded to an OH group, it becomes a carboxy group. Compounds containing this functional group are called **carboxylic acids**.

Some Aldehydes



Some Ketones



Some Carboxylic Acids

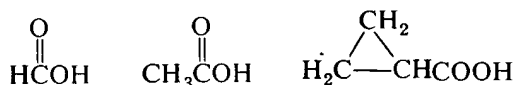


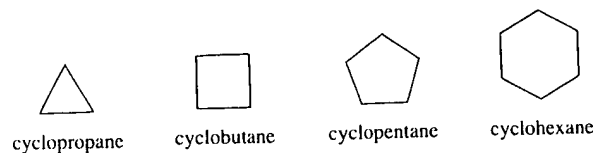
Table 3.1 lists a number of the important functional groups. The structures and names of these groups should be committed to memory. They form an essential part of the language of organic chemistry. In our subsequent studies we will develop the chemistry of the individual functional groups in terms of structural and electronic theory, nomenclature (names), physical properties, the preparation from other functional groups, and the characteristic reactions that produce other groups.

Interconversions of functional groups constitute a large proportion of organic chemistry. After the individual groups have been studied, the effect of one group on another can be considered, for the organic chemistry of compounds with more than one functional group is not simply the sum of the parts. Groups affect each other, sometimes in complex ways. One of the reasons for studying the theory of organic chemistry is that the mutual interactions of functional groups can be understood.

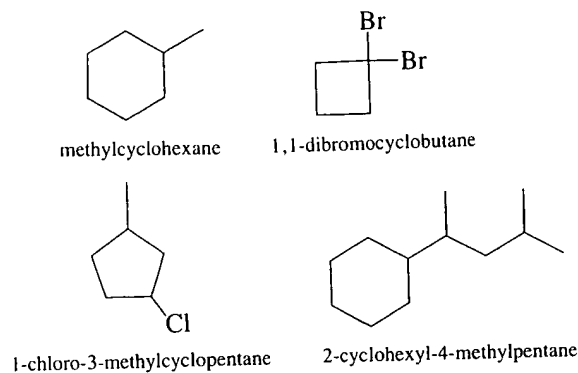
The aromatic ring in Table 3.1 is written with three carbon-carbon double bonds. Nevertheless, we shall see later (Chapters 20 and 22) that compounds containing this ring system differ substantially in their chemistry from the alkenes. Compounds containing this ring system are known collectively as **aromatic compounds**. Compounds with no aromatic ring are known as **aliphatic compounds**.

EXERCISE 3.2 Using R = ethyl, write structural and condensed formulas for one example each of an alkene, an alkyne, an alcohol, an ether, an aldehyde, a ketone, a carboxylic acid, an amine, and a nitrile.

Cycloalkanes are usually symbolized by simple geometric figures in which a carbon atom with its appropriate number of attached hydrogens is understood to be present at each apex. Thus, the four smallest cycloalkanes are depicted as



Simple substituted cycloalkanes are depicted by the appropriate geometric figure, with attached substituent groups.



The alkanes and cycloalkanes are the parent structures in the general class of aliphatic compounds. Most of the chemistry of cycloalkanes is similar to that of the alkanes. There are some differences in stability and in their conformations, which will be discussed in Sections 5.6 and 7.7, respectively.

EXERCISE 5.5 Using simple geometric figures and line structures, depict the following compounds. Compare your structures with complete structural representations.

- | | |
|--|-------------------------------------|
| (a) 1,1,3-trimethylcyclohexane | (b) 3-cyclopentylpentane |
| (c) 1-chloro-4-chloromethylcyclohexane | (d) 1,1,2,2-tetramethylcyclopropane |

5.5 Heats of Formation

The heat of formation of a compound from its elements in their standard states is a thermodynamic property with considerable use in organic chemistry. This quantity, symbolized ΔH_f° , is defined as the enthalpy of the reaction of elements in their standard states to form the compound. The standard state of each element is generally the most stable state of that element at 25°C and 1 atm pressure. The standard state of carbon is taken as the graphite form, whereas those of hydrogen and oxygen are H_2 and O_2 gases, respectively. By definition, ΔH_f° for an element in its standard state is zero. The standard heat of formation of butane is $-30.36 \pm 0.16 \text{ kcal mole}^{-1}$ and that of 2-methylpropane is $-32.41 \pm 0.13 \text{ kcal mole}^{-1}$.

